

MAY 0 3 2001

SEQUENCE LISTING

TECH CENTER 1600/2900

YEH, EDWARD T.H. <120> COMPOSITIONS AND USES FOR A NOVEL CELL-DEATH-PROTECTING PROTEIN

<130> UTSH:248 <140> 09/484,964 <150> 08/964,162 <151> 1997-11-04 <150> 60/030,302 <151> 1996-11-05 <160> 16 <170> PatentIn Ver. 2.0 <210> 1 <211> 1465 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (88)..(390) cgggaaggat ttgtaaaccc cggagcgagg ttctgcttac ccgaggccgc tgctgtgcgg 60 agacccccgg gtgaagccac cgtcatc atg tct gac cag gag gca aaa cct tca 114 Met Ser Asp Gln Glu Ala Lys Pro Ser act gag gac ttg ggg gat aag aag caa ggt gaa tat att aaa ctc aaa Thr Glu Asp Leu Gly Asp Lys Lys Gln Gly Glu Tyr Ile Lys Leu Lys 15 gtc att gga cag gat agc agt gag att cac ttc aaa gtg aaa atg aca 210 Val Ile Gly Gln Asp Ser Ser Glu Ile His Phe Lys Val Lys Met Thr 35 aca cat ctc aag aaa ctc aaa gaa tca tac tgt caa aga cag ggt gtt 258 Thr His Leu Lys Lys Leu Lys Glu Ser Tyr Cys Gln Arg Gln Gly Val 50 cca atg aat tca ctc agg ttt ctc ttt gag ggt cag aga att gct gat 306 Pro Met Asn Ser Leu Arg Phe Leu Phe Glu Gly Gln Arg Ile Ala Asp 65 aat cat act cca aaa gaa ctg gga atg gag gaa gaa gat gtg att gaa 354 Asn His Thr Pro Lys Glu Leu Gly Met Glu Glu Asp Val Ile Glu 80 gtt tat cag gaa caa acg ggg ggt cat tca aca gtt tagatattct 400 Val Tyr Gln Glu Gln Thr Gly Gly His Ser Thr Val ttttattttt tttcttttcc ctcaatcctt ttttattttt aaaaatagtt cttttgtaat 460 gtggtgttca aaacggaatt gaaaactggc accccatctc tttgaaacat ctggtaattt 520 gaattotagt gotoattatt cattattgtt tgttttcatt gtgctgattt ttggtgatca 580 agecteagte ecetteatat taccetetee titttaaaaa ttacgigtge acagagaggt 640 cacctttttc aggacattgc attttcaggc ttgtggtgat aaataagatc gaccaatgca 700 agtgttcata atgactttcc aattggccct gatgttcagc atgtgattac ttcactcctg 760

```
gactgtgact ttcagtggga gatggaagtt tttcagagaa ctgaactgtg gaaaaatgac 820
ctttccttaa cttgaagcta cttttaaaat ttgagggtct ggaccaaaag aagaggaata 880
tcaggttgaa gtcaagatga cagataaggt gagagtaatg actaactcca aagatggctt 940
cactgaagaa aaggcatttt aagatttttt aaaaatcttg tcagaagatc ccagaaaagt 1000
tctaattttc attagcaatt aataaagcta tacatgcaga aatgaataca acagaacact 1060
gctcttttta gattttattt gtactttttg gcctgggata tgggttttaa atggacattg 1120
tctgtaccag cttcattaaa ataaacaata tttgtcaaaa atcgtactaa tgcttatttt 1180
attttaattg tatagaaaga aaaaaatgcc taaaataagg ttttcttgca taaatactgg 1240
aaattgcaca tggtacaaat tttttcttca ttactgtaca gggatgatgt taatgacttt 1300
ggagcactga aagttactga agtgccttct gaatcaagga tttaattaag gccacaatac 1360
ctttttaata ctcagtgttc tgttttttt aaaaacttga tattcccgta tggtgcatat 1420
ttgatacagg tacccaatca tgttggataa atgggcatgc cagcc
 <210> 2
 <211> 101
 <212> PRT
 <213> Homo sapiens
 Met Ser Asp Gln Glu Ala Lys Pro Ser Thr Glu Asp Leu Gly Asp Lys
                                       10
 Lys Gln Gly Glu Tyr Ile Lys Leu Lys Val Ile Gly Gln Asp Ser Ser
                                   25
 Glu Ile His Phe Lys Val Lys Met Thr Thr His Leu Lys Lys Leu Lys
                               40
 Glu Ser Tyr Cys Gln Arg Gln Gly Val Pro Met Asn Ser Leu Arg Phe
                           55
 Leu Phe Glu Gly Gln Arg Ile Ala Asp Asn His Thr Pro Lys Glu Leu
  Gly Met Glu Glu Glu Asp Val Ile Glu Val Tyr Gln Glu Gln Thr Gly
                       70
                   85
  Gly His Ser Thr Val
              100
  <210> 3
  <211> 774
  <212> DNA
  <213> Homo sapiens
   <220>
   <221> modified_base
   <222> (53)
   <223> Y = C or T
   <220>
   <221> modified base
   <222> (689)
   <223> N = A, C, G or T
   <220>
   <221> modified base
   <222> (739)
   <223> N = A, C, G or T
   <220>
   <221> modified_base
   <222> (744)
    <223> N = A, C, G or T
    cggcacgagg gtgctgcttg tgtgctcgtt tggtgcggac ctggtacctc ttyttgtgaa 60
    <400> 3
```

```
gcggcagctg aggagactcc ggcgctcgcc atggccgacg aaaagcccaa ggaaggagtc 120
aagactgaga acaacgatca tattaatttg aaggtggcgg ggcaggatgg ttctgtggtg 180
cagtttaaga ttaagaggca tacaccactt agtaaactaa tgaaagccta ttgtgaacga 240
cagggattgt caatgaggca gatcagattc cgatttgacg ggcaaccaat caatgaaaca 300
gacacacctg cacagttgga aatggaggat gaagatacaa ttgatgtgtt ccaacagcag 360
acgggaggtg tctactgaaa agggaacctg cttctttact ccagaactct gttctttaaa 420
gaccaagatt acatteteaa ttagaaaact geaatttggt teeaceacat eetgactaet 480
acceptatagt titicticatt citicattic eccettecee attectitat tetacataaa 540
gtaactggta tatgtgcaca agcatattgc atttttttt tttttaacta aacagccaat 600
ggtatgtttt gattgacatc caagtggaga cggggatggg gaaaaatact gattctgtgg 660
aaaatacccc cctttctccc attagtggnc atgctccatt cagcccttaa acctttataa 720
tcccaggtaa ggtaatttng cccncaccgg ttttacccaa aaaaaaaaa actt
<210> 4
<211> 95
 <212> PRT
 <213> Homo sapiens
 Met Ala Asp Glu Lys Pro Lys Glu Gly Val Lys Thr Glu Asn Asn Asp
 His Ile Asn Leu Lys Val Ala Gly Gln Asp Gly Ser Val Val Gln Phe
                                  25
 Lys Ile Lys Arg His Thr Pro Leu Ser Lys Leu Met Lys Ala Tyr Cys
                              40
 Glu Arg Gln Gly Leu Ser Met Arg Gln Ile Arg Phe Arg Phe Asp Gly
                          55
 Gln Pro Ile Asn Glu Thr Asp Thr Pro Ala Gln Leu Glu Met Glu Asp
                                           75
                      70
 Glu Asp Thr Ile Asp Val Phe Gln Gln Gln Thr Gly Gly Val Tyr
                                       90
                   85
  <210> 5
  <211> 1733
  <212> DNA
  <213> Homo sapiens
  <220>
  <221> modified base
  <222> (19)
  <223> N = A, C, G or T
  ttcggcacag gcgggaganc ggcggggccg aagcgtgaac tcgcccgctc cggcttgctt 60
  ccccgcgcc gcctccccgc gccgctcgga agccatgtcc gaggagaagc ccaaggaggg 120
  tgtgaagaca gagaatgacc acatcaacct gaaggtggcc gggcaggacg gctccgtggt 180
   gcagttcaag atcaagaggc acacgtcgct gagcaagctg atgaaggcct actgcgagag 240
   gcagggcttg tcaatgaggc agatcagatt caggttcgac gggcagccaa tcaatgaaac 300
   tgacactcca gcacagctga gaatggagga cgaggacacc atcgacgtgt tccagcagca 360
   gacgggaggt gtgccggaga gcagcctggc agggcacagt ttctagaggg cccgtcccca 420
   gcccgggccg tccatcctcg cattgctgtt gaatggtgag cacgtgacca tgccgaccac 480
   aaaggtgtct gcggaaactc gaggacattc accacgatga ttttcctctc tttgatgtac 540
   ttcaagtgca actcaaaact atatctgcag ggatgaatct gtaacttaaa ttgggccaat 600
   cagaattgtt atctttgttc aggtaaaatg agttgcaaga tattgtgggt acttttgtgt 660
   gctcatttgt gttttccccc cctcctacaa cattttttta accccaaaat tatagcctga 720
   atgttcgctt ttagtctggc cagggatctg actcctgagt tggttgcctc tcccctgctc 780
   actccagtca catagagaat tggtgtttcc cgcagtgggg attgcagctg ttggacaggt 840
   attgggggca aggttggtag ggaggacaga ctgtcacttg ctgttacagg cacaggtgat 900
```

```
taaaatgcta aatattgcaa atttaagctt tgtcagtata tggaaaagtt gaagggaaaa 960
tactggaatg cttcttcaaa ggttaaaaaa taaccgagtc ttttggtaat ttgaccccac 1020
gtgctctctg gccctcaagc atgtaacctc ggggtctgag gcccaggacc caccccctg 1080
ccacccctcc caccccactc cctgctcagt acctggcgtt ggtacacagg caaggattgg 1140
cacaaccaaa attggccttt ttctccctct taatattgaa gaaattccca catttctcat 1200
ttggtaatgg tgttgtggcc tcagatttct tctagtattt gcttctgatg aatgattatg 1260
gtotatacat aaaaaagtaa gactaagtat tgctgaattt gcagttatgt tgtcgtgtat 1320
aagagctact tccaagtgtg gttacaaatg aacccatgga atgatgactt catgttcttc 1380
tcgtgggttt gtgccgtgct gctttccaaa taggtattga atttatgcat tagtctggtg 1440
atttcagttc tgtgaaatat tttgggatct ataccaatta aacattttca tagttctgcc 1500
tattgtcctt ccctgaggct ccattgctgc ttggtggcca ttctctgcct ttttacagtc 1560
acctgaacaa tgacccatca tctcttgctt gcttgaaatc ttgctgaaat gttctcattt 1620
 cctgtttgct gtatgggctc gggtgggatg tttgttggct ctgttgtgtt tattcaccaa 1680
 tttgtacatt atttgttgtc ctttactact gtaaacagta aatatagttt ggt
 <210> 6
 <211> 103
 <212> PRT
 <213> Homo sapiens
  Met Ser Glu Glu Lys Pro Lys Glu Gly Val Lys Thr Glu Asn Asp His
  Ile Asn Leu Lys Val Ala Gly Gln Asp Gly Ser Val Val Gln Phe Lys
  Ile Lys Arg His Thr Ser Leu Ser Lys Leu Met Lys Ala Tyr Cys Glu
  Arg Gln Gly Leu Ser Met Arg Gln Ile Arg Phe Arg Phe Asp Gly Gln
  Pro Ile Asn Glu Thr Asp Thr Pro Ala Gln Leu Arg Met Glu Asp Glu
  Asp Thr Ile Asp Val Phe Gln Gln Gln Thr Gly Gly Val Pro Glu Ser
                    85
   Ser Leu Ala Gly His Ser Phe
               100
   <210> 7
   <211> 9
   <212> PRT
   <213> Artificial Sequence
    <223> Description of Artificial Sequence: Synthetic
   <220>
          Peptide
    <400> 7
    Arg Gly Ser His His His His His His
      1
    <210> 8
    <211> 30
    <212> DNA
    <213> Homo sapiens
                                                                        30
     <400> 8
     cttaggatcc atggcctcgg aagacattgc
     <210> 9
```

```
<211> 30
<212> DNA
<213> Homo sapiens
                                                                   30
<400> 9
gtgtgaattc tagaccttgt acagcgtctg
<210> 10
<211> 7
<212> PRT
<213> Artificial Sequence
 <223> Description of Artificial Sequence: Synthetic
       Peptide
 <400> 10
 Arg Gly Ser His His His His
  1
 <210> 11
 <211> 9
 <212> PRT
 <213> Influenza virus
  <400> 11
 Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
  <<210> 12
  <211> 4
  <212> PRT
  <213> Homo sapiens
  <400> 12
  His Ser Thr Val
    1
   210> 13
   <211> 101
   <212> PRT
   <213> Saccharomyces cerevisiae
   Met Ser Asp Ser Glu Val Asn Gln Glu Ala Lys Pro Glu Val Lys Pro
   Glu Val Lys Pro Glu Thr His Ile Asn Leu Lys Val Ser Asp Gly Ser
                                     25
   Ser Glu Ile Phe Phe Lys Ile Lys Lys Thr Thr Pro Leu Arg Arg Leu
                                 40
   Met Glu Ala Phe Ala Lys Arg Gln Gly Lys Glu Met Asp Ser Leu Arg
                             55
    Phe Leu Tyr Asp Gly Ile Arg Ile Gln Ala Asp Gln Thr Pro Glu Asp
    Leu Asp Met Glu Asp Asn Asp Ile Ile Glu Ala His Arg Glu Gln Ile
    Gly Gly Ala Thr Tyr
```

100

```
<210> 14
<211> 80
<212> PRT
<213> Human
Met Gln Ile Phe Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu
Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp
                                 25
Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
                            40
Gln Leu Glu Asp Gly Arg Thr Leu Ser Asp Tyr Asn Ile Gln Lys Glu
                         55
Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly Gly Leu Arg
                     70
 <210> 15
 <211> 76
 <212> PRT
 <213> Human
 Met Leu Ile Lys Val Lys Thr Leu Thr Gly Lys Glu Ile Glu Ile Asp
 Ile Glu Pro Thr Asp Lys Val Glu Arg Ile Lys Glu Arg Val Glu Glu
                  5
                                  25
 Lys Glu Gly Ile Pro Pro Gln Gln Arg Leu Ile Tyr Ser Gly Lys
                              40
 Gln Met Asn Asp Glu Lys Thr Ala Ala Asp Tyr Lys Ile Leu Gly Gly
                          55
 Ser Val Leu His Leu Val Leu Ala Leu Arg Gly Gly
                      70
  <210> 16
  <211> 30
  <212> PRT
  <213> Human
  Val Gln Asp Leu Ala Gln Leu Val Glu Glu Ala Thr Gly Val Pro Leu
                                       10
  Pro Phe Gln Lys Leu Ile Phe Lys Gly Lys Ser Leu Lys Glu
                                   25
               20
```